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PHILADELPHIA, APRIL 29, 1876.

ORIGINAL COMMUNICATIONS.

A THEORY OF THE DICROTIC PULSE.

BY FREDERICK P. HENRY, M.D.,
Physician to the Episcopal Hospital, Philadelphia.

THE cause of the dicrotic pulse has long been a physiological enigma whose attempted solution has given rise to many curious and some ingenious theories. Some of these are mentioned in the principal works on physiology, apparently in order that the author may display his skill in refuting them, while others are brought forward because, although extremely unsatisfactory to the mind, they have so far proved invulnerable to criticism.

The principal of these theories are two in number; one representative of the former class,—those mentioned for the sake of refutation; the other of the latter class,—those mentioned because they have been, until now, proof against criticism. The former is the theory of Weber, who assumed that the closure of the aortic semilunar valves produced a secondary undulation which accounted for the phenomenon of dicrotism. This was disproved by the fact that this phenomenon occurs before the closure of these valves. The second is the theory of Marey, which accounts for the dicrotic pulse on the supposition of a concussion received by the blood at the point of division of the aorta into the two primitive iliacs. I hope to show, in the course of this article, that this theory is untenable, and at the same time to offer one which is believed to be entirely novel, and which, while explaining the phenomenon of dicrotism, will also throw light upon some other phenomena of the arterial circulation whose causes have been involved in considerable obscurity. The pulse is composed of two elements: there is, first, the *wave* of blood and the corresponding and coincident wave of dilatation of the elastic arterial coats; secondly, there is the blood-*current* itself, which travels so much slower than the undulation that it arrives at the wrist during the recoil of the artery. It is the blood-current which causes the reascent in the line of the sphygmographic tracing.

At this point it seems necessary to call attention to the importance of keeping well before the mind the distinction between *wave* and *current* motion. "*Unda non est materia progrediens, sed forma materiæ progrediens*," or, as Tyndall expresses it in English, "the propagation of a wave is the propagation of a form, and not the transference of the substance which constitutes the wave" (Lectures on Light).

The undulation precedes the current, and, so to speak, prepares the way for it: here, as in other fluids, it consists mainly of an up-and-down movement of the particles, that is, one at right angles to the current, which movement is intermittent. The current consists of a continuous onward movement of the blood-stream, whose volume is increased at each ventricular contraction. The following illustration will explain the mode of action of these two forces that go to make up the pulse. Suppose the radial artery to pulsate sixty times per minute, and the dicrotic movement to occur during the middle (in time) of a pulsation; it will then arrive at the wrist one-half second later than the undulation; the artery is recovering from its distention, the wave is descending into its furrow, when it encounters the current, augmented by a certain amount of blood propelled by the last cardiac systole; it is interrupted, nay, more, it is tilted upward; the current rushes past, and the wave descends into its furrow without further interference. This is the theory of the dicrotic pulse which I advance in this article. It is not to be confounded with one which regards the pulse as made up of *two undulations*, one of which traverses the arterial wall, and the other the blood (Marshall's Physiology). My theory maintains a primary undulation of both blood and artery, corresponding and coincident, and a succeeding current motion of the blood; this is its distinguishing characteristic, and this entitles it to whatever merit it may claim on the score of originality.

It has been calculated that the undulation inaugurated by the cardiac systole reaches the radial artery at the wrist in one-sixth of a second. Supposing, as before, that there are sixty pulsations per minute, and that the dicrotic reascent begins at the middle (in time) of a pulsation; then the maximum current will arrive at the wrist in one-sixth plus one-half a second, *i.e.*, in two-thirds of a

second. At any given point in the arterial system there will therefore be a constant relation between the rate of the wave and that of the current motion, since both owe their existence to the same force,—the cardiac systole; but as we proceed farther from the centre of the circulation the current motion will lag behind the undulation, and consequently the dicrotic reascent will approach nearer the furrow of the wave.

This brings us to the consideration of Marey's theory of dicrotism. It has been stated in support of that theory that dicrotism does not occur in the arteries of the lower extremity. There is but one artery in the lower extremity sufficiently superficial to permit of the proper application of the sphygmograph, viz., the posterior tibial behind the inner malleolus. The femoral is too thickly covered with fascia and adipose tissue to allow of a successful application of this delicate instrument; and the same is the case with the popliteal. The fact, if it be a fact, that dicrotism does not occur in the posterior tibial at the level of the malleolus, is easily explained by my theory, and introduces another curious and extremely interesting question. By the time the current has reached the malleolus it has fallen a full pulsation behind the undulation, until in an artery so far removed from the heart as the posterior tibial at the point mentioned, it coincides with the succeeding undulation into which it is merged, the greater force of the dilating artery (the undulation) obliterating all signs of dicrotism.

These two forces—undulation and current—also help to explain the continuous movement of the blood in the smallest vessels. I have just considered the nullifying effect upon dicrotism of the movement of the blood in an artery so far removed from the heart that the maximum current has fallen exactly one pulsation behind the undulation. As we proceed still further we will reach a point in the arterial system where the maximum current has fallen one and a half pulsations behind the undulation. This gives rise to the phenomenon of *interference*. The law of interference in its application to optics and acoustics is thus defined by Prof. Tyndall: "In general terms the waves conspire when the one series is an *even* number of half-wave lengths, and they are destroyed when the one series is an *odd* number of half-wave lengths in advance of the other" (Lectures on Light). Therefore, in the case of the blood circulation, when the vibration of the artery produced by the blood-current has fallen one and a half pulsations, or three half-wave lengths, behind the undulation, there is a tendency towards extinction of all undulation, and consequently the production of a continuous instead of an interrupted flow of blood in the smallest arteries. In other words, when the crest of the wave produced by the current corresponds with the furrow of the primary undulation, the flow of blood is continuous. This is illustrated by the diagram.

The physiological meaning of the dicrotic pulse thus receives a full explanation. It is from the beginning, when the current is one half-wave length behind the undulation, an effort towards the establishment of an uninterrupted flow of blood by means of the law of interference. In its earlier manifestations, when it is but one half-wave length behind, and when the wave movement is very powerful, it is too feeble to do more than pave the way for its successful interference when it has fallen one and a half-wave lengths behind.

It has been seen from the foregoing that there is a point where the current has fallen two half-wave lengths behind the undulation, and where, therefore, according to the law, "waves conspire when the one series is an even number of half-wave lengths in advance of the other," there must be a temporary increase in the force of the blood-current: this takes place in the smaller arteries, and may be intended as an aid to the current in its transit through the arterioles and capillaries where it is to be deprived of whatever aid is furnished by the undulation of the arterial walls. Such a secondary aid to the circulation would be in strict analogy with the circulation in the lowest vertebrates. In the amphioxus, "the lowest fish and therefore the lowest vertebrate," there is no heart, but "numerous contractile cavities situated in the course of the chief blood-vessels."

In man there are no such contractile cavities, but, according to my theory, at a certain point in every artery the waves traversing its walls, viz., that produced by the primary undulation, and that by the succeeding current, conspire to produce the same result.

Dicrotic anomalies, such as several in-

terruptions of the descending line of the sphygmographic tracing, are to be accounted for by abnormal conditions of the coats of the artery. It has been shown by recent experiments that muscle is perhaps the most elastic tissue of the body. Under normal circumstances, the elasticity of the muscular arterial coat corresponds with that of the external coat; but if the former be paralyzed, as it may be in a variety of affections, the difference in elasticity would give rise to a double interruption in the line of descent, or the loss of elasticity may be so great as to cause the middle coat to be thrown into a series of vibrations which are perceptible to the finger. On the approach of death from asthenia, we frequently observe what is called a running or fluttering pulse. The beats are counted with the utmost difficulty, because they are not all true undulations, but are largely made up of tremors or vibrations of the relaxed artery, relaxed from paralysis of the muscular tunic. These tremors may possibly occur in the line of ascent as well as in that of descent. This *false dicrotism* is so great, and the undulations so feeble, that the two cannot be distinguished; and the numerous tremors and undulations, confusedly intermingled, render it impossible to obtain a correct idea of the propulsive power of the heart. We know empirically, it is true, that such a pulse indicates the last degree of feebleness of the cardiac muscle.

Finally, in reply to Marey's theory, I would state that there is not time for a wave produced by concussion at the aortic bifurcation to travel backward from this point either along the arterial wall or the blood, and produce the dicrotic phenomenon. The current has arrived at the wrist, or nearly there, at the time such a concussion begins. We have seen that it takes two-thirds of a second for the maximum blood-current to reach the wrist, and it will take a proportionate time to reach the aortic bifurcation, so that there would remain too small a fraction of a second for a wave to accomplish this backward journey.

Dicrotism is physiological and serves a physiological purpose,—the production of a continuous flow of blood in the arterioles and capillaries.

For an exposition of the undulatory theory of the pulse, I would refer to Küss (Lectures on Physiology), who quotes the experiments of Czermak and Onimus. That there is some transference of particles, or current motion, during the primary undulation, I do not deny; but I maintain that this movement is *principally* undulatory, while the succeeding blood-stream is an onward, steady, non-fluctuating current.

635 Spruce Street.

TOPICAL APPLICATIONS IN SURGERY.

BY HARRISON ALLEN, M.D.,

Surgeon to the Philadelphia Hospital.

Read before the Philadelphia County Medical Society, February 9, 1876.

IN inviting the attention of the members to this subject, I propose to follow a method suggested by my anatomical studies: that is, to search for the effects of local agents in the changes observed directly within the tissues themselves. I divide my material as follows:

1. The study of the action of an agent on both living and dead tissues.

2. The comparison of chemical with mechanical irritants.

3. The strength of agents as influenced by the elements of the tissue acted upon.

1. We have all noticed that agents useful in preserving dead tissue are also valuable to the living as stimulants, caustics, or both. Among such may be mentioned chloride of zinc, arsenic, chloral, and carbolic acid. We will assume that the action of each of these articles is the same on both the living and dead. The latter receives the essential impression, while the former retains the impression plus the disturbing influence,—namely, stimulation, inflammation, or, it may be, the more violent changes leading to death. I may postulate this portion of my subject as follows: An agent which can arrest decomposition in a dead tissue must of necessity have some effect upon the living.

For examples may be mentioned: (*a*) acetic acid, which softens connective tissue for many purposes of research, is of use in removing fibrous induration. It has been proposed by an English writer to treat fibrous growths by injections of this acid. (*b*) Chromic acid, which acts by appropriating to itself the surrounding moisture. It is suggested that this action upon the body is best seen in examples of growths removed in a degree from a well-defined capillary net-work, as in the soft condylomes and the polypoid growths associated

with chronic discharge from the middle ear.

2. Under this head may be discussed the differences between the effect of a splinter in the flesh and the action of an acid of irritating strength. Both of these are intruders, I will say, in a healthy performance of function. When the influence of analogous changes is studied by fretting the capillary net-work (say of a bat's wing) with a needle, or by dropping some irritating fluid upon it, we find that while both agents are equally topical, they differ in the degrees of their effects. The needle excites a localized irritation, the acid a diffused one. So in the tissue the splinter arouses a smaller circle of disturbance than does the chemical. The two agents further differ in that while the former is fixed and invariable, the latter can be made to modify the degree of impressment anywhere along the scale of stimulation. Used in this restricted sense, stimulation is a mechanico-vital process, excited and maintained by direct action on the tissues.

3. Here is included the consideration of tissue in its direct relation to topical application. Each local expression of a given tissue exhibits its own method of responding to the agent. Let me illustrate this by the action of nitrate of silver. Upon a healthy granulating surface it may act as a stimulant, upon weak, large granulations (proud flesh) as a caustic; upon an incised wound as a violent irritant; upon painful fissures as a protectant, by coagulating the albumen and giving rest to the part.

For ordinary use in the larynx, a strength of solution varying from sixty to eighty grains to the ounce or even greater is constantly resorted to. In the urethra such a strength would cause violent inflammation and perhaps destruction. The reason of this contrast is easily found in the structure of the muco-perichondrial membrane of the larynx, as compared with the thin sensitive urethra with its outlying cavernous tissue and its abundant muscular endowment.

The highly organized conjunctiva lies in direct association with the blood-vessels and nerve-supply of the entire orbit, and forbids, at least on its ocular layer, the use of strengths which can be employed topically with freedom in the lowly-organized muco-periosteum of the middle ear. I do not hesitate to apply Monsel's solution to the polypoid growths of the middle ear; indeed, I prefer this method to the ordinary one of evulsion. Dr. Charles Seiler has suggested to me that in localities where mucus is abundant allowance must be made for the decomposition of the nitrate of silver by the chloride of sodium. Hence the strength should be greater where mucus is abundant than where little or none is present. The same relation of structure to strength is seen between the mucous membrane of the eye and the ear.

Gum-tissue responds languidly to local impression, by reason of the close union present between it and the bone. It may be placed in the same group with the lining membrane of the middle ear. The tincture of iodine employed by the dentist is supersaturated,—a strength sufficient to vesicate a skin-surface.

The adenoid tissue of the roof of the pharynx and the tonsil are also extremely resistant. Excessively strong applications being here necessary, the ordinary tincture of iodine—indeed, any possible preparation of iodine—is of no avail. Saturated solutions of nitrate of silver, fuming nitric acid, pure carbolic acid, can be used in these localities for indurations, etc., with excellent results.

In this connection may be mentioned the coarsely folliculated structure of these growths, especially the tonsil, in connection with local applications. I have been in the habit of applying agents of concentrated strength as above described to these pockets. It occurs to me that this is the proper method of reaching the seat of trouble, instead of "swabbing" rudely the exposed surface.

By taking a cotton-carrier (such as is employed in treatment of the ear) and soaking the cotton tip in the selected agent, a thorough application to the *entire* surface can be made in a few moments. Such treatment is especially applicable to the chronic enlargements so common with these glands. Where it is advisable to remove the tonsil by London paste, it can readily be accomplished by the same procedure. To apply these substances to the roof of the pharynx with precision, the aid of the rhinal mirror is required. I have found such treatment but little complained of,—much less so, indeed, than the rasping method (by instruments introduced through the nose) as recommended by Meyer.

THE ESMARCH BANDAGE AND ITS SUBSTITUTES.

BY R. J. LEVIS, M.D.,
Surgeon to the Pennsylvania Hospital.

THE advantages of the elastic bandage in securing bloodless operations are now generally recognized by surgeons, and some practical suggestions, intended to impress the profession in regard to its great merits and which will facilitate its general use, may be acceptable.

In the last issue of the *American Journal of the Medical Sciences* is a communication from Dr. David Little, which is inclined to disparage the merits of the elastic bandage, as compared with the substitution of an ordinary muslin roller bandage which he recommends for such purposes. Immediately on the first publication of Professor Esmarch's article on the avoidance of hemorrhage by the use of an elastic bandage, and before the proper appliance was obtainable, I repeatedly used the ordinary muslin roller to effect the compression, and am able, from practical experience, to give evidence of its decided inferiority to the india-rubber bandage.

The peculiar advantage of the elastic bandage is the *equable* and *continuing* pressure which is produced in applying it, so that the blood is gradually and continuously forced upward, and none is retained, as with the muslin bandage, between irregularly constricting lines of the circular turns. The muslin roller well applied may answer somewhat effectively, as I know from experience, particularly on attenuated limbs or on the distal portions of extremities; but surgeons may be seriously disappointed in producing with it bloodless operations in the upper portions of limbs of vigorous patients, especially of those which are large or very fat. If, on an emergency, the simple muslin bandage be ever resorted to, I recommend that two such bandages be placed on the limb, every turn of the bandage made by the surgeon being *immediately* followed by another similar bandage in the hands of an assistant; thus equable, continuous, and forcible pressure may be effected. A better and more effective bandage than that of muslin for bloodless operating may be made of a good quality of ordinary flannel, long enough to encase the limb well, with full allowance for overlapping of edges.

I have for a long time discarded the use of the elastic webbing and constricting tubing, as proposed by Professor Esmarch, in favor of a bandage made of pure india-rubber. The bandage which I am in the habit of using for encasing the limb is five yards long and two and a half inches wide; and the constricting band or tourniquet is of a much thicker and stronger material, two yards in length and one inch and three-quarters in width. The pure india-rubber bandage has the merits of greater elasticity, strength, durability, cleanliness, cheapness, and more perfect adaptability. The constricting band is perfectly effective as a tourniquet, without the great disadvantage of the narrow tubing of Professor Esmarch in producing severe linear pressure, which, it is known, has often caused more or less enduring paralysis from extreme nerve-compression. My tourniquet band is without the complications of chain and hook, as in Professor Esmarch's, the final securing being simply effected by tying together pieces of strong cord, one of which is permanently attached through a hole in each end. The elastic bandage, as I have described it, can be procured of Mr. Levick, manufacturer of india-rubber articles, 724 Chestnut Street, Philadelphia.

It should be borne in mind that the advantage of the Esmarch bandage is not alone in the avoidance of the loss of blood in the patient, but every surgeon who has effectively used it in such operations as the excisions of joints or of necrosed bone is aware of how the completely exsanguinous condition of the tissues, resembling those of the cadaver, facilitates the accuracy of the procedure.

Mr. Erichsen has made the remark that he "fears that the cultivation of surgery as an *art* is not keeping pace with the progress of surgery as a *science*;" and the surgeon who appreciates the value of what is well expressed in an aphorism from a recent address of Sir William Fergusson, that "the glory of surgery is *precision*," will surely recognize in the use of the elastic bandage an advancement in the precision of surgical art.

SOLUTION OF SALICYLIC ACID.—Emlen Painter, Ph.D. (*Pacific Med. and Surg. Jour.*, April, 1876) suggests the following formula, which contains two grains of the acid to the fluidrachm: acid. salicylic., gr. xxxii; sol. acet. ammon., oz. ii. Dose, a teaspoonful, to be increased or diminished as required.

A CASE OF CEREBELLAR TUMOR, ASSOCIATED WITH BASILAR MENINGITIS.

BY ALLAN McLANE HAMILTON, M.D.,

Visiting Physician to Epileptic and Paralytic Hospital, Blackwell's Island, N.Y., etc.

IN the early part of last summer I was called to make a post-mortem examination in the case of a man who had died very suddenly, a diagnosis not having been made during life. The gentleman was a patient of Dr. J. C. Smith, of New York. The following is the history of his case:

G. L. C., æt. 26, of a nervous temperament, general health good; parents both alien; no nervous tendency; never had syphilis. Four years ago the patient became irritable and morose, and continued so till January, 1873. He then devoted himself to hard study, and rarely took exercise or amusement. Two months afterwards he became debilitated, and had attacks of vomiting, which occurred in the morning, and were relieved somewhat by the upright position. In the following April a loss of steadiness of the lower limbs was noticed. He reeled, and a sudden fright would cause him to fall. He no longer went alone on the street; when he did so, he reeled, staggered, and felt conscious that he was the object of curiosity. His face became congested, and his nose very red, although his habits were very good. He went to the seashore, but nevertheless grew worse, and derived no benefit from the change. About this time diplopia troubled him, and he tried various devices to correct this visionary difficulty, such as shutting one eye and looking across his nose with the other, but without relief. In August, violent headache developed itself, and vomiting was frequent. He could not look up or throw his head back without dizziness and pain. Cathartics and local blisters did no permanent good, nor did the bromides.

May, 1875.—The patient presents the same symptoms. He is very much troubled by headache, which is paroxysmal. He staggers wildly, and his vision is not improved. On the day before his death he went to see some friends, and on his return complained of a terebrating pain in the back of his head. He went to bed, and slept, under the influence of chloral hydrate. When his wife awoke in the morning she found him dead. He had evidently died without any convulsion, or she would have been aroused. The night before his death there was some mania, and he shouted words of the different languages he spoke,—German, French, Italian,—in a confusing jargon.

At no time was there impairment of speech or deglutition; there was never ptosis, nor deafness, loss of smell or of taste. Paralysis was never observed, nor were there convulsions of any kind.

Autopsy eight (?) hours after death. The scalp was cut through, and the cut surfaces were almost black with blood. On removing the bone the meninges were hyperæmic to a marked degree, the sinuses were engorged beneath the arachnoid, and in the ventricles was a large amount of yellowish fluid, the former being puffed out by the serum under the surface. Nothing unusual was noticed in the hemispheres beyond the hyperæmia before alluded to, and careful slicing of the basal ganglia revealed nothing of importance. The texture of the nervous substance was normal. At the base of the brain a very different state of affairs was found to exist. From before backwards there were evidences of acute inflammatory action, the left side more particularly being the seat of softening. The right crus of the optic commissure was very much disorganized. There was a well-organized membrane, very pink and net-like, which extended over the inferior surface, one band binding down the left root of the optic commissure.

Beneath the lining membrane of the fourth ventricle, at a point beneath the lower and anterior part of the cerebellum, was an effusion, with softening of the cerebellum. This membrane was bellied out, and had evidently produced death by direct pressure upon the calamus scriptorius.

At a point corresponding to the middle of the lower vermiform process of the cerebellum was a small hard tumor, about two centimetres in length, one and a half in breadth, and the same in thickness, which, when cut, disclosed a red jelly-like centre, and a hard fibrous exterior, resembling, somewhat, a syphilitic growth. The line of demarcation between the healthy tissue and the circumference of the tumor was very well marked. Beneath the microscope Dr. E. G. Janeway and I found it to be a glioma of the firmer kind, there being a fibrous structure containing the characteristic cells.

After hardening pieces of the cerebellum and the medulla oblongata, I examined them microscopically. The evidences of disorganization of the nervous elements at the nuclei of the vagus were apparent. The nerve-cells were deprived of their processes, and the nerve-tubes were broken. The sections of the cerebellum were made contiguous to the tumor, and here I found considerable thickening of the neuroglia and disappearance of nerve-tissue, while the vessels were very much diminished in size.

The remarkable feature of this case was the existence of so much structural injury with so few corresponding changes in the function of important parts destroyed. One would naturally expect to find symptoms of impairment of the cranial nerves

with such an intense basilar meningitis; but with few exceptions these were *nil*. I have often been astonished at the absence of grave symptoms when extensive lesions existed in the cerebral substance. Cerebral growths and abscesses of large size not rarely remain undetected until death occurs from some intercurrent disease.

123 East Thirtieth Street, April 17.

VENESECTION.

BY FERDINAND LESSING, M.D.

MRS. B., æt. 54, as the result of exposure was seized with pneumonia on the 13th of March; a few days later erysipelas also made its appearance. She got nicely over these troubles, but March 20 she imprudently exposed herself, and was taken with an intense congestion of the lung. The following day I found her with a pulse of 40, interrupted and hard, and a hurried respiration, accompanied by an intense feeling of suffocation and by bronchial breathing heard all over the chest. A hypodermic of morphia gave only temporary relief, and I then bled her eight ounces, changing immediately the hard, slow, and interrupted pulse to a soft, regular one of 50, and obtaining easy breathing. I kept her heart well stimulated with digitalis whenever the pulse went lower than 40, and gave brandy *ad libitum*. The lungs this time, in spite of well-tried remedies, were slow to rally, and Sunday, the 26th, I was again called; found her then with a pulse of 24, interrupted, so that in the intervals two or three beats were missing. I gave her at once half a spoonful of tinct. digitalis, which again brought the pulse up to 40; yet, seeing that oxidation of the blood was insufficient, and that the relief by the digitalis would not be lasting, and believing the slowness and irregularity of the pulse to be due to the paralytic effect of the toxic poison, carbonic acid, upon the heart, I ventured to bleed her a second time, when again the pulse became soft, with few and far-between interruptions only, the rate at the same time increasing to 52 per minute. Only four ounces were taken. The patient was not plethoric, but rather anæmic, and I therefore bled her only until I got the color of "venous" blood; I say venous, because what I took away was so charged with carbon that it actually looked *black*.

To-day, March 31, the patient has a soft regular pulse of 72, respiration easy and normal, the bronchial sounds have disappeared, and resolution with convalescence has begun in earnest. I report this case to show what *judicious* bleeding can accomplish, and the necessity of discrimination when and how much to bleed.

Winona, Minnesota, March 31, 1876.

OIL OF SANDAL-WOOD IN THE TREATMENT OF GONORRHŒA.

BY S. B. MERKEL.

I AM fully persuaded that the oil of sandal-wood possesses a much greater power in restoring to a healthy state the mucous membrane of the urethra than does either cubebs or copaiba. In no case have I ever known it to produce sickness.

There are objections, I admit, to the use of the oil of sandal-wood, on account of the persistent and disagreeable sensation it leaves in the throat, the irritating action it has on the stomach, and the difficulty of obtaining the pure oil, much of it being adulterated and of inferior quality. The first difficulty is overcome when it is given in the form of a capsule; the second, when it is mixed with a tenth part of the common oil of cinnamon; and the third is to be met by selecting a brand of established purity.

A LARGE DOSE OF AMMONIA.

BY J. BROOKE, Asst. Surg., U.S.A.

A SHORT time ago, while attending a woman to whom I had occasion to give brandy and ammonia, I one evening left a four-ounce bottle of aromatic spirits of ammonia standing upon a shelf in the house. The next morning, to my utter surprise, I found the bottle empty, and upon inquiry learned that the husband had drunk the contents, at once, during the night, evidently under the impression that it contained brandy.

He had vomited once very slightly, and complained only of a moderate amount of burning in the fauces and epigastrium. I gave him an emetic of ipecac mixed plentifully with vinegar, and followed its operation by a dose of castor oil similarly flavored.

The man suffered no inconvenience beyond a few days' gastric irritation and diminished appetite, although he had swallowed four ounces—less about a drachm—of undiluted aromatic spirits of ammonia.

NOTES OF HOSPITAL PRACTICE.

PENNSYLVANIA HOSPITAL.

SERVICE OF DR. WM. HUNT.

Reported by JOHN B. ROBERTS, M.D., Resident Surgeon.

A CASE OF HYDROCELE OF THE TUNICA VAGINALIS CONTAINING SPERMATOZOIDS.

W. R., aged 74, was sent to the hospital with the statement that he was suffering with irreducible hernia. When admitted, the patient stated that four years previously he had fallen astride of a rail, and injured his scrotum, which immediately became very much swollen. This swelling decreased, though not entirely, for since the accident the right side had always been larger than the left. Ten days before admission, the patient felt pain, and noticed that the old swelling was rapidly increasing.

When the part was examined, there was found a pyramidal tumor of the scrotum, about as large as a man's fist; the lower and posterior portion was hard and cylindrical, while the upper anterior part was soft and fluctuating, extended up to the inguinal ring, and presented to the eye the deformity found in inguinal hernia. This inguinal portion of the tumor was absolutely dull on percussion, and received no impulse when the patient coughed. The pain felt was referred to the inguinal region, but there was no vomiting.

The diagnosis in this case lay between hernia and hydrocele, but, as there was no transmitted impulse on coughing, no vomiting, and a dull percussion-note, the evidence was in favor of hydrocele; and this diagnosis was supported by the fact that there was translucency when the tumor was examined by transmitted light. The case, then, was considered one of hydrocele combined with chronic orchitis, for the indurated section of the tumor was too large to be a normal testicle.

When the trocar was introduced into the tumor there flowed out about six fluid-ounces of whitish fluid, which microscopic examination showed to be full of spermatozoids. Unfortunately, the microscopic examination was not made until the day after the tapping, for it would be interesting to know whether the spermatozoids were active in this fluid drawn from a patient 74 years of age.

The fluid of hydrocele of the tunica vaginalis seldom contains spermatozoids, unless, as occasionally happens, a cyst of the testicle ruptures into the cavity of the tunica vaginalis, and the spermatic fluid is thus thrown into this unusual situation. Encysted hydroceles of the testicle often contain seminal fluid, and this was most probably the primary condition in the present case. At first, a cyst probably formed between the tunica albuginea and the tunica vaginalis, and, on account of its communication with some of the seminiferous tubules, it must have contained spermatozoids. Finally this cyst ruptured and poured its contents into the vaginal tunic, which became distended, and perhaps, indeed, secreted serous fluid in addition to the other, until the tumor reached the inguinal region and presented the appearance of a hernia.

After the man was relieved of the accumulation of fluid, he was quite comfortable, and was discharged without any radical treatment being attempted.

STRANGULATED HERNIA SIMULATING HYDROCELE.

A man was admitted who stated that he had, while working, one year previously, sustained a sudden enlargement of the scrotum; but it did not give much trouble, for he could always push the swelling into his belly. On the day before admission he experienced pain in the region of the right groin, and when he examined the scrotum he found that he was unable to reduce the mass by manipulation. He had never worn a truss, but thought the tumor was a rupture, because his friends had said so.

Such was the patient's own account, when questioned regarding the history of his trouble. On examination, the left side of the scrotum was as large as a small cocoanut, and from the fluctuating character of the tumor and its translucency, the diagnosis of hydrocele was readily made. This condition, the man said, had existed from childhood, and was not at all the cause of his applying for hospital relief.

The diagnosis of the trouble in the right side of the scrotum was much more obscure. There was a pyramidal swelling, about as large as a closed fist, extending downward from the groin; it was hard, but presented indistinct fluctuation, was not in the least translucent, and received no impulse when the patient coughed.

The patient insisted that until the day before he could always push the contents of the tumor backward into the belly; and therefore, although the symptoms seemed to point to hydrocele of the cord, reduction of the supposed hernia by taxis was attempted under ether. The attempt was unsuccessful, however, and was abandoned; and then turpentine enemata were ordered, to be repeated until the bowels were opened freely. The next day he began to vomit a greenish mucus, and in order to determine whether there was an obstruction of the bowels, such as would be caused by a strangulated hernia, a fluid-ounce of castor-oil was given. This was followed by great pain in the abdomen, which was alleviated only by anodynes; but the bowels were not opened, and the vomiting continued, without, however, being stercoraceous. Poultices to the abdomen and ice to the scrotum was then adopted as the line of treatment.

On the third day the scrotal tumor appeared to be smaller and softer, and there was succussion at the very top of the tumor when the patient coughed. Another effort at reduction was made without ether, and suddenly the tumor slipped from under the fingers into the abdominal cavity, thus establishing the diagnosis and relieving the symptoms. In order to prevent dragging by the heavy hydrocele on the other side, this was tapped, and about twelve fluid-ounces of clear yellowish fluid withdrawn. From this time the man steadily improved, for there was no more vomiting, no pain, and a return of his appetite.

This case is interesting on account of the obscurity of the diagnosis; the signs pointed to hydrocele rather than hernia, and the former condition was rendered probable by the undoubted existence of hydrocele on the left side. The history of the man, as given by himself, was of course open to criticism, for he had never been examined by any one capable of making an accurate diagnosis of hernia. Another point of clinical importance is the circumstance that the hernia was at first irreducible, even when the patient was etherized, and yet, subsequently, under the influence of rest and cold applications, taxis was efficacious in replacing the protruded viscus.

A CENSUS of Philadelphia, taken April 1, 1876, counted 817,000 inhabitants.

TRANSLATIONS.

THE DANGER OF FLOWERING AND FRUIT-BEARING PLANTS IN SLEEPING-APARTMENTS (Dr. Reitter: *Wiener Med. Presse*, No. 43, 1875).—The volatile matters which are exhaled from fruits and flowers possess in a high degree the power and tendency of absorbing the oxygen of the surrounding air, thus creating a corresponding quantity of carbonic acid.

By this reaction the salubrity of such air for those who breathe it is injured in two ways, both by the abstraction of oxygen and by the addition of carbonic acid. Since this fact is but too little known, and still less regarded, it ought from time to time to be mentioned, and instances given of fatal results from the neglect of its manifest teachings.

A gentleman suffered from severe headache, and felt such weakness that he could scarcely keep awake. He noticed some hyacinths in the chimney, which he removed and opened the window, when his symptoms all became less severe; but it was some days before his head became entirely clear. Another man had the unlucky idea to construct a bower of oleander branches in the chamber in which he slept. The next morning he was found dead in bed. A grocer and his servant slept together in a room in which were three chests filled with oranges, and they also were found dead in the morning. A clerk in a warehouse, who performed the duties of night-watchman, used a sack containing saffron as a pillow, with a like fatal result. W. A.

ENCEPHALITIS DIPHTHERITICA.—An infant in the family of Dr. Ludwig Letzerich, of Braunfels, was attacked twelve days after birth by diphtheritic sore throat. Local applications removed the exudation, but the child lost flesh and strength rapidly, fell into a somnolent and finally a comatose condition, and finally died at the end of the sixth week, and fourteen days after the disappearance of the diphtheritic deposit from the throat.

Post-mortem examination five hours after death showed marked congestion of the blood-vessels of the cerebral meninges. The gray substance of the brain was pale, and on section was found greatly thinned, the boundary between it and the white substance frequently ill defined and almost

invisible. The right ventricle was considerably smaller than the left. The right hemisphere, in fact, was larger than the left, although the ventricle was smaller, the left being normal. Microscopic examination showed the neuroglia of the gray substance as a finely granular mass of detritus, in which numerous neuroglia cells were embedded. Living bacteria were present in such enormous quantities that the gray substance seemed to be literally an emulsion of them. A similar condition was observed in the cerebellum, in addition to which the perivascular spaces were infiltrated with plasma cells and serum. The diagnosis was therefore diphtheritic paralysis of the brain. (*Virchow's Archiv*, v. 65, 4th part, 1875.) x.

Medico-Legal Examination of Blood-Stains.—Dr. Malinin, of Tiflis (*Virchow's Archiv*, v. 65, 1875, p. 528), uses a saturated solution of caustic potassa in ninety per cent. alcohol, with which he treats the moistened stain just before examination under the microscope, and manipulates it in various ways, which he details. The appearance of the globules serves to reduce the uncertainty to narrow limits, and the diagnosis is finally made by measuring the diameter of the corpuscles. Malinin draws the following conclusions:

1. If the diameter of the suspected corpuscle is less than 0.0060 mm., it is not human. 2. If the diameter reaches or exceeds 0.0070 mm., it is probably human. 3. If the diameter varies between 0.0060 and 0.0070 mm., it may be concluded that the specimen has not been derived from the goat, sheep, or ox; it may possibly have come from the dog, pig, or man. x.

Thoracic Cardiac Ectopia.—At a recent meeting of the *Société Anatomique*, M. Désert read an account of a patient in whom percussion showed perfect resonance in the præcordial and sternal regions, while on a level with the right nipple the fingers were raised by vibrations, and the eye could distinguish an impulse in the fifth intercostal space, similar to that usually caused by the shock of the cardiac apex. The sternum was prominent, the præcordial region flattened, and the right mammary region prominent. The vertebral column was curved, with the concavity to the right; in fact, the chest was boat-shaped. The patient attributed the deformity to a fall received when eight years old. The pulsations of the heart could be perceived under the right mamma, between the right lobe of the lungs and the liver. The other viscera were normal, excepting the stomach, which, when full, was raised so as to touch the lung. The first sound of the heart was accompanied by an apex murmur. M. Désert believed the dislocation congenital, and thought it unique, as the only case of displacement in which the apex was directed to the right. (*Le Progrès Médical*, 1876, p. 74.) x.

Treatment of Diabetes Mellitus by Glycerin.—Dr. Julius Jacobs (*Virchow's Archiv*, v. 65, p. 481) alludes to the futility of all previously lauded means of treatment in this affection, and gives notes of two cases treated by Shultz's method. Shultz maintained that diabetics lose, by excessive excretion of sugar, enormous quantities of respiratory material, and are obliged to give up their fat and protein for this purpose. If glycerin, which is not changed into sugar in the organism, but is transformed directly into carbonic acid and water, be administered, this waste is compensated, or rather vicariously prevented, by the glycerin. Jacobs made use of the following formula:

℞ Glycerinæ, ℥vi;
Pulv. acid. tartaric., ℈iv;
Aq. destillat., f℥xss.—M.
To be taken in twenty-four hours.

Although Jacobs did not obtain very brilliant results from this treatment, yet the patient's improvement was sufficient to encourage further use of the remedy. The usual food was taken. x.

The Etiology of Early Malignant Syphilides.—Dr. E. Ory, who has recently published a brochure on this subject, proposes to seek the solution of the following problem: Given a patient having an indurated chancre upon which supervene precocious malignant syphilides, that is to say, eruptions appearing at a date earlier than that recognized by the rules of the authorities and of a more severe type than the average, what is the cause of this exceptional appearance and gravity? Does the malignity of syphilis depend upon the strength of the virus, the seat of the chancre, or the soil in which the germ is implanted? M. Ory does not believe in the first view. One sees the same "seed" produce in one case benign syphilis, in another an early and malignant outbreak. The difference in the age of the virus, that is, whether

communicated in the first or second stage, is also proved by experience to exert no influence in determining the severity of the attack. The seat of inoculation, according to M. Ory, exercises no influence upon the subsequent course of the disease. This view is not shared by M. L. Landowzy, who reviews Dr. Ory's book in *Le Progrès Médical* (February 5, 1876), and who points to the severity of the symptoms observed in the case of physicians and others, inoculated upon the fingers as well as in other inoculations by "non-natural" channels, to prove that the malignity of the disease may be governed by the locality at which it enters the body. The question as to the "influence of the soil" has been investigated by Dr. Ory with great care. The analysis of cases given by him shows that a bad soil produced by "lymphatism or scrofula," or by privations, excess, etc., brings about malignant and early syphilis. "Tell me what you are, and I will tell you what degree of syphilis you will have; show me your syphilides, and I will tell you what you are." These aphorisms, says M. Landowzy, will give a pretty good idea of the thesis maintained by Dr. Ory in his able brochure. A. V. H.

Differential Ophthalmoscopic Signs of Concussion and Compression of the Brain. — M. Bouchut (*Centralblatt für Chirurg.*, No. 12, 1876; from *Gaz. des Hôpitaux*) regards ophthalmoscopic examination of the fundus of the eye as the most certain method of diagnosis between simple concussion and the more severe traumatic lesions of the brain. If concussion only exists, the usual normal appearances are observed. In contusions of the brain, on the other hand, with or without consecutive inflammation, as well as in the case of serous or hemorrhagic effusion into the cavity of the cranium, symptoms of a more or less intense congestion are observed in the neighborhood of the ophthalmic vessels, since the disturbance of circulation within the skull is necessarily transmitted hither. The optic nerve is swollen, appears flattened, uniformly reddened, sometimes more intensely injected. Its contours are less sharp, and it is the seat of serous swelling, which, passing over the neighboring portions of the retina, covers the border of the papilla to a greater or less degree. From these symptoms Bouchut was enabled, in the four cases cited, to establish a certain diagnosis which the other clinical symptoms had failed to make good. Other similar cases have been published by Bouchut, in 1865, in his "Traité de Diagnostique des Maladies du Système Nerveux par l'Ophthalmoscope." X.

Transfusion of Blood into the Cellular Tissue (*Centralblatt für Chirurgie*, No. 42, 1875).—M. Nicaise reports a case in which he was performing transfusion in a patient who was almost moribund from repeated hemorrhages following cancer of the uterus. A sudden movement caused the canula to slip out of the vein, and before the operation could be entirely suspended about fifteen grammes of blood escaped into the subcutaneous cellular tissue. This was followed by a moderate swelling, which entirely disappeared on the following day, the condition of the patient being markedly improved. The amelioration was, however, only temporary, and she died a few days later. At the autopsy it was found that all the extravasated blood had been absorbed, the cellular tissue being slightly discolored; the vein contained a large thrombus, its walls were somewhat thickened, and the incision was obliterated. M. Nicaise suggests that the employment of hypodermic transfusion may possibly be preferable to the intravascular method, and mentions some experiments upon animals in whom it was found that blood injected into the subcutaneous cellular tissue became absorbed very rapidly. No disturbance either of a local or general nature was apparent when the blood was taken from the same species, freed from fibrin, and had a temperature of 37° to 38° Cent. When it was taken from animals of another species the absorption likewise took place very rapidly, but death resulted in a short time. J. W. W.

A Case of Urethral Calculus (*Centralblatt für Chirurgie*, No. 43, 1875).—N. Stukowenkoff reports the case of a peasant, forty-six years of age, who complained of great difficulty of urination. He had had numerous vesical calculi from early youth, three having been removed before he was five years of age. In his twenty-third year a perineal abscess formed, and was opened, a stone being extracted at that time. When he came under observation there was a large dense tumor in the perineum, with a fistulous opening at the lower end. A stone could be detected by the passage of a probe through the fistula or

by the introduction of an instrument into the urethra. It was found to lie in the bulbous and membranous portions of the urethra, and was removed. The indurated and hypertrophied portions of the urethra were then excised, and a month later a plastic operation was performed, which resulted in an almost complete cure, only a small fistula remaining. J. W. W.

Wounds of the Vagina (*Centralblatt für Chirurgie*, No. 43, 1875).—M. Günsberg relates the case of an old woman, who, falling in a dark place, ran the handle of a shovel into her vagina. This was followed by severe hemorrhage and unconsciousness. On examination, he found in the right side an oblique circular wound extending from the meatus urinarius to the posterior commissure. During this examination the bleeding and unconsciousness continued, with deadly paleness of the skin and an almost imperceptible pulse.

The vagina was tamponed with compresses dipped in ice-water, and the patient soon came to, complaining of great pain in the thighs and buttocks. In four or five days she had entirely recovered, another examination showing that the wound had healed.

In another instance a peasant pressed into the vagina of his wife, an idiot, the upper part of a wineglass, the stem of which was broken off. Twenty-four hours later, when she was first seen, the belly was much enlarged, her linen soaked with blood; no urine had been passed for thirty-six hours. The glass was removed with the aid of a Sims speculum and a pair of forceps, but was broken during this operation, and the vagina was again lacerated. The patient, however, recovered, with no unpleasant consequences.

M. Günsberg remarks that, notwithstanding the frequent performance of obstetric operations, such cases rarely occur, and alludes to those given above as disproving the assertion of Kiovisch that serious hemorrhage only occurs when the bulbi vesiculi are injured. J. W. W.

Effects of Jaborandi on the Eye.—J. Tweedy (*Lancet*, January 30, 1875) finds that the application of extract of jaborandi to the conjunctiva produces narrowing of the pupil, defects of accommodation, and depression of visual powers, the last being apparently due to a diminution of the sensibility of the retina. None of these symptoms are of long duration; the defective accommodation begins in a quarter of an hour, reaches its maximum in forty minutes, and vanishes within an hour and a half. W. A.

Tabes with Progressive Bulbar Paralysis (M. Cuffer: *Centralblatt für die Med. Wissenschaften*, No. 53, 1875; from *L'Union Méd.*).—In a man who had been suffering for a year, unmistakable symptoms of progressive gray degeneration of the posterior column of the cord were noticed. To these were added the following symptoms: moderate wasting of the muscles of the ball of the right thumb, and very marked atrophy of the right half of the tongue. Speaking was rendered difficult, but swallowing was not impaired, and the functions of the muscles of the palate and face, as well as the sensibility of both sides of the face, were normal. The lateral motion of the under jaw was interfered with to some extent.

Extension of chronic progressive degeneration of the posterior columns into the large cells of the anterior pillars has often been met with, but it is seldom that the origins of the hypoglossal and trifacial nerves in the medulla are thus impaired. W. A.

A Case of Diphtheria of the Wound of Vaccination (L. Letzerich: *Centralblatt für die Med. Wissenschaften*, No. 5, 1876; from *Virchow's Archiv*, lxiii.).—Thirteen days after vaccination had been performed upon a child, a diphtheritic coating was noticed at the point where the lymph had been introduced, at which previously nothing abnormal had been observed. Erysipelatous redness and œdema soon came on, followed by icterus and death on the twelfth day, or the twenty-fifth from the time of vaccination. At the post-mortem examination nearly all the organs were found infiltrated with micrococci, the splenic pulp being especially noted as resembling an emulsion containing bacteria at all stages of development. L. thinks that the diphtheritic infection was of later date than the vaccination, since the period of incubation would have been too long, and the vaccination pursued its usual course until the thirteenth day.

By inoculation of vaccine matter with which the fungi of diphtheria had been mixed upon a rabbit, the specific action of the former was prevented, and only diphtheria resulted. W. A.

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, APRIL 29, 1876.

EDITORIAL.

THE SUBJECT-CATALOGUE OF THE NATIONAL MEDICAL LIBRARY.

NO. I.

THERE is probably not one of the readers of the *Times* who has not some knowledge of the magnificent collection of books which has hitherto been known as the Library of the Surgeon-General's Office, but which it is now very properly proposed to call the National Medical Library. As, however, this library has arrived at a stage at which money liberally spent is necessary to the full achievement of its renown and usefulness, and lest Congress, smitten with a penny-wise pound-foolish principle, may refuse these grants, it appears right and fitting to lay the subject in all its bearings before the medical public, and to endeavor to stir up the profession to such activity as to lead Congress to do the right, even if from motives no higher than that of the unjust judge.

The libraries of the Old World are among their greatest crowns of glory. When the long periods of their growth are contrasted with the sudden rush into maturity of the medical library at Washington, the promise of future renown which the latter offers becomes apparent. The collecting of books at the Surgeon-General's office may be stated to have been practically begun during the later years of the war, and yet to-day there are on the shelves forty thousand volumes, properly so called, and about as many single pamphlets.

The sum of money which has been spent, when compared with the result, is exceedingly trifling. A very large part of the books have been obtained by donations and by an elaborate series of exchanges which the librarian, Dr. Billings, has inaugurated. The skill of this latter gentleman in finding rare books on the shelves of private libraries is, as we can testify, equalled only by the tact and eloquence exercised in causing their migration to the one centre. The government publications afford a great deal of material for the exchanges; cheap sets of American medical periodicals, books, and pamphlets, picked up at the book-stands of all our great cities, no doubt swell the duplicate resources of the library; but there is still another tributary which we may mention as an evidence of the shrewdness of the management. How far other journals are implicated in this we do not know, but the American exchanges of the *Philadelphia Medical Times* are gathered up so cleanly that no garnerers would find it worth while to follow. Bushels and bushels we have sent to Washington, asking no *quid pro quo*, persuaded only by the *ipse dixit* of the librarian that the good of the nation and of the general profession demanded it.

The reasons which have seemed to us so cogent as to make it the duty of every medical man to sacrifice in a considerable degree not merely personal possessions but even local public libraries to the national interest can be stated in a few sentences.

It is essential for the renown and indeed for the usefulness of the many that the few be provided for, or, in other words, though the writers in this country be numbered only by scores, yet it is the interest of the whole profession, and, indeed, of the whole commonwealth, that these scores be furnished with the means of work. Now, unless some one creates a great foundation, it is impossible in the next quarter of a century for any local medical library in the United States to furnish to these writers supplies of the rarer and often more valuable periodicals. Local libraries must for a long time to come be satisfied with furnishing the bulk of the student's need. The only opportunity of authors for being

perfectly furnished is in the national library. Though there were but six Hippocrates in the land, the highest interests of the world and of the United States would consist in furnishing these medical giants with whatever their lustiness demanded. After all, however, the number who have used the library is by no means so few, and in the future it must increase in arithmetical proportion.

The growth of the few to a great stature produces as an inevitable result the development of the many. Moreover, food begets fatness; so that through the direct and indirect influence of a national library there is reason to hope that the badly-worded empty speculations, the badly-recorded and perhaps badly-observed facts which now so encumber American periodical literature, will give way to earnest careful work, such as at present constitutes the smaller portion of the original articles in our medical journals. We even have dared to hope that the National Medical Library might in some occult way lead to the suppression of the Transactions of the American Medical Association.

It has been arranged that any one who has achieved even a respectable position in the profession may get books out of the national library. It would not do for the librarian to loan directly to persons outside the city of Washington. It would be impossible for him to know who was worthy and who was not, and equally impossible for him to hunt up and hold to account the careless borrowers when books were missing. Therefore it has been determined not to loan books to individuals, but to libraries or to medical societies. Thus: Dr. John Smith, member of the College of Physicians of this city, desires a book not in the college library; the college librarian, unable to satisfy him, sends an order to Washington, and the book is sent by express to the college library, whence it is taken by John Smith. If the book is lost or damaged the national library holds the college responsible, and the college library looks to John Smith for its indemnification. With a medical society the mode of procedure is entirely parallel.

It is plain that, notwithstanding this liberality, the library at Washington fails to fulfil to most of the physicians of the United States what is one of the great attributes, if not *the* great function, of a library. No one can find out what is written without searching. How can we order what we want from the national library unless we know what that want is? It is manifestly impossible for most of us to go to Washington to look over the multitudinous volumes. Here Dr. Billings proposes to come to our aid. Much more carefully and thoroughly than we would have done it, with a patience of perseverance almost marvellous, he proposes to look over the books, journals, and pamphlets, and catalogue by subjects all the papers therein: in fact, he has already, to a great extent, done so. It is a specimen* of the result of this labor that he now lays before the profession. What we have further to say of it must be postponed, since our editorial columns are already full.

CORRESPONDENCE.

LONDON LETTER.

[From our Special Correspondent.]

AT the conclusion of my last letter I mentioned the death of Dr. Warburton Begbie, of Edinburgh,—a most accomplished physician. He was personally most popular for his winning manners, as well as respected for his professional skill. This letter commences, almost, with the announcement of the death of Parkes, of Netley, a man of very similar character. Parkes was much more widely known than Begbie, and his works on hygiene and on the urine are of world-wide reputation. Both were men who were well established in life, and freed from any absolute necessity for labor; their toil was voluntary, and the outcome of professional enthusiasm. Their deaths so close together point with grim sig-

* Specimen Fasciculus of a Catalogue of the National Medical Library, under the direction of the Surgeon-General of the United States Army at Washington, D.C.

nificance to the effects of long-sustained toil after the trials of early life are over. It was just this same protracted labor which cut down recently Fuller, Anstie, Gascoyen, and other well-known men, or, at least, so enfeebled their resistive powers that they sank under what might have been successfully resisted if the body-forces had not been so heavily drawn upon,—in other words, if they had not been physiologically bankrupt.

This danger lies especially before professional men of all others. They toil for a reputation by which to live, and then they continue their efforts to reap the harvest they have sown and so carefully tended. "Poverty must not be vanquished merely; it must at all risks be pursued and still pursued, as if it were potent forever." The strain which can be undergone successfully by the organism in its early days is too much for the tissues of middle age. These two concurrent deaths, just at the time of the publication of Dr. B. W. Richardson's work on "The Diseases of Modern Life," possess a special significance. They point with painful distinctness to what is there written, and which must be perused with suspended breath by many readers, who will find graven there the characteristics of their own condition. Perhaps it is rather sensationally written, but still it is true in the main, and is a work likely to be largely read. The above brief quotation is a fair specimen of its style. If the world goes on madly eager in its pursuit of its objects, whether fame, knowledge, or wealth, it cannot plead that the evils to be encountered have not been plainly pointed out to them by recent writers,—that there are no prophets to warn them.

The opening of the Grocers' Wing of the London Hospital by the Queen, on the 7th, was most successful, and one bright day, conspicuous amid bad weather, gave éclat to the ceremony. The wards were kept in their every-day working attire, so that Her Majesty could see the hospital life of her East-End subjects without any disguise from temporary glitter, and in all its prosaic plainness. As I said in my last letter, it has been generally thought that no honors would be conferred on the profession; but, after some little delay, the chairman of the Hospital Committee has been knighted.

The subject of medical advertising in lay papers has recently been taken up warmly by the organ of the British Medical Association. The facts are notorious enough that many books are written not because the writer has anything to say worth reading, but because he wishes to be identified with some special department of medicine or surgery; and by writing a book on the subject, and advertising it thoroughly, his name gets associated with that subject in the public mind, and he thrives accordingly. It is even said that reputations have been made, and the pecuniary benefits arising therefrom reaped, by the advertisement of a work preparing, but which, after many years of such preparation, has never reached the printer's hands. This, of course, is of little moment, as the advertisement has served the desired end. It is a somewhat complicated question, this medical advertising. The advertisement in lay papers is too obvious and transparent to be defended by any one, but the front pages of medical journals have great attractions, and command special prices. It is not only that such page strikes the profession distinctly: it attracts much lay attention, as the journals lie on club-room tables, or even on the counters of stationers and on railway bookstalls. Advertising must and will go on as long as enterprise exists; all that can be done is to confine it within proper channels. But what with open surgeries, with many-colored bottles conspicuous far and wide, the scarcely less glaring red lamp, the brass door-plate, and even the annual report of the hospital with the names of the staff placed prominently forward, to say nothing of the cards of hospital patients with the names of their medical and surgical advisers in strong Roman characters printed thereon, it is difficult to say what is and what is not legitimate medical advertising. I shall have something to say in a subsequent letter as to both sides of this question, and the method of filling up the vacancies adopted by the staff of leading hospitals.

Mr. Weston did not walk five hundred miles in six days, but he got over four hundred and fifty, with a sprained knee. He attracted much professional as well as general interest. The impression that his endurance was due to chewing the leaves of the erythroxylon coca, and that by its means a new generation of pedestrians and other athletes, who should throw the feats of the past into the shade, would now spring up, has been dissipated. Dr. Pavy has carefully examined the excretions and estimated the amount of urea passed, while Dr. Mohamed has applied the sphygmograph with some interesting results. If the muscles attract an undue amount of blood, the blood-pressure falls, and the brain fails from defective supply of arterial blood. If the blood-pressure be high, the brain is all right, but the heart falters from the obstruction offered to the blood-flow in the arteries. These, it seems, are the two chief sources of failure in these great efforts.

The anti-vaccination agitators have gained at last a conspicuous martyr. Mr. Milmer, Chairman of the Board of Guardians at Keighley, a town in the busiest district of the West Riding of Yorkshire, has been sent to jail for objecting to have his child vaccinated and declining to pay the fine imposed for his contumacy. His example in defying the law, which he officially should have supported, will make him a popular man for the nonce amid the rude manufacturing population.

There is not much that is new in the way of actual practice. Salicylic acid is being used for the treatment of pyrexia, especially that of rheumatic fever, with very satisfactory results, which will soon be published. Mr. Maunder has just made an artificial anus from the small intestine,—a rare operation, in this case quite successful. The debate on syphilis is still going on, and cannot yet be summarized. Prof. D. Ferrier, M.D., has delivered two most interesting and instructive lectures at the London Institution: the first on Sleep, and the second on Dreaming. The most advanced physiological knowledge was neatly interwoven with pleasant illustrations, and the lectures were listened to by large and most attentive audiences, a considerable proportion of whom were medical men.

The researches of Hughlings Jackson into the origin of epilepsy are well known. Recently a most delicate compliment was paid to the value of these researches by M. Charcot. He proposed to call those seizures which involve one side of the face and the corresponding arm, not accompanied by loss of consciousness, "the epilepsy of Jackson."

The British Medical Association last August decided to hold its meeting this year at Brighton. Recently the profession at Brighton gave unmistakable evidences of their disinclination to receive the Association. The Committee of Council have so placed themselves in a very awkward dilemma, which is made none the less by the recent death of Sir J. Cordy Burrows, the president-elect, a leading citizen of Brighton, and the leader of the few who wished to receive the Association.

PROCEEDINGS OF SOCIETIES.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Reported by FRANK WOODBURY, M.D.

THE PRESIDENT, DR. DRYSDALE, in the chair.

AT a conversational meeting held February 9, 1876, after the paper of the evening, on Topical Applications in Surgery,* had been read by Dr. Allen, remarks upon the subject were made by a number of gentlemen.

Dr. LAURENCE TURNBULL, in response to an invitation from the President to give his views upon the subject of the address, said that, in so far as it related to the ear, he could not quite agree with the lecturer that there was such a great distinction in regard to the application of remedies to the eye and to the middle ear. It is true that the eye is more sensitive, yet in a diseased condition it would sometimes bear, and even call for, strong applications. He could not go as far as Dr. Allen in the opinion that the middle ear, both in health and disease, is almost as insensible to irritating or stimulating agents as the mucous membranes of the mouth. It depends much upon the method of making the application and how it is borne. If the application of the remedy is limited, and made with great care, and the parts, soon after, either cleansed, or the agent employed neutralized, all will be well. If, however, strong solutions of persulphate of iron, chromic acid, or nitrate of silver are injected or poured into the meatus, so that they can pass through a perforation into the delicate and important region of the middle ear, there is much more risk of injury.

In every inflammation, every catarrh of this part of the ear, there is also an accompanying periostitis; and from this double relation it is very plain how deeply-extending disease of bone may arise from a simple catarrhal affection. The epithelium of the tympanum is tessellated, and in the lower part of the cavity provided with cilia, so that applications are carried to every point. If seriously diseased, it most frequently takes the course of the roof of the tympanum, thus reaching the middle lobe of the cerebrum, or, if a little more backwards, to the posterior lobe. The disease or inflammation, lighted up by a strong application, may, as the speaker had noticed, affect the posterior wall of the tympanum, and, later, the cerebellum, and not very infrequently the lateral sinus itself; or it sometimes mounts upwards through or around the margin of the tentorium to the brain proper. The bone will be found not always carious or necrosed, but inflamed, which inflammation extends to the dura mater. Another objection to the strong lotions of persulphate of iron is the precipitate it forms with otorrhœal discharges. Strong solutions of nitrate of silver, from eighty to two hundred and forty grains to the ounce, are stated, on the authority of Dr. Schwartz and others, to do very excellent service, but, like all powerful remedies, will also do harm, will even destroy. These solutions are introduced through the external meatus, and even blown through the Eustachian tube, and so reach the middle ear. Immediately after using strong solutions of nitrate of silver, the ear is to be syringed out with a solution of common salt, made, if possible, to pass as far inwards as the caustic solution has done. The insoluble chloride of silver is formed, and comes away in large flakes. From the immediate swelling of the mucous membrane which follows, and the spasm in the faucial muscles and even epiglottis, the neutralization of the strong solutions is not always effected, for it is not always possible to have the injection of salt and water proceed in the same track. More than this, the speaker had known of a case of death, and another of facial paralysis, to follow the application of a very strong solution of nitrate of silver poured into the meatus, which reached the middle and internal ear. These results should check recklessness,

* See page 363, *ante*.

at least on the part of those who practise aural surgery. In regard to burning away the enlarged tonsils with a paste of caustic lime and potash, he had found it a very tedious process, and preferred removal by the knife of a portion of the gland, as the speediest, and, in his opinion, the most efficient, remedy.

Dr. HARRISON ALLEN did not wish to be understood to recommend the pouring of strong solutions into the ear, but referred to their application to the desired location after the ear had been well washed out. Then with the aid of a speculum in position, so that the agent was under perfect control, the application was made. In chronic otorrhœa the discharge is often kept up by polypoid granulations; these he never attempts to remove by cutting, but, after washing out the ear, applies Monsel's solution, on cotton, directly to the part. He had used salicylic acid (two drachms to water a pint, dissolved with the aid of phosphate of calcium) with good results, especially in otorrhœa following scarlet fever; he frequently gave it to the patients to use themselves as a douche.

Dr. STRAWBRIDGE said: My own experience, which has been very great, is that I have often been perfectly amazed at the small amount of pain complained of when strong solutions of nitrate of silver, say a drachm to the ounce, have been employed, even when they run through the Eustachian tube into the throat. Dr. Pomeroy reported a case where only a slight burning was felt, after the instillation of a very strong solution of nitrate of silver (four hundred and eighty grains to the ounce).

Dr. BURNETT understood the discussion to turn upon the topical application of remedies to the diseased mucous membrane of the middle ear.

In chronic ear-disease, such as otorrhœa, the mucous membrane of the middle ear, being far from its normal condition, is not so sensitive to topical applications as are the tissues of the ear in health. He had often used a saturated solution of nitrate of silver (480 gr. —f℥j) in the diseased middle ear, and found that it caused no discomfort beyond a slight burning, referred chiefly to the Eustachian region.

He had also used chromic acid in crystals, and found that it caused pain, lasting for a long time, more than an hour, when applied to the middle ear for the destruction of polypoid growths; he has now discontinued its use.

Chloro-acetic acid (Merck's) he uses constantly for the destruction of polypoid growths and the pedicles of polypi. This acid is *never* to be instilled into the ear, but is to be applied to the perfectly-illuminated ear by means of a small pledget of cotton on the cotton-holder. Each diseased spot is then to be carefully and thoroughly touched with the not too freely soaked cotton, and if the healthy skin of the meatus is not touched, the pain caused by the introduction of this most excellent remedy into the ear will not be very great, and in any event is always removed, when the acid has been skilfully applied, by syringing with warm water afterwards. It is therefore perfectly manageable if properly used in the ear, and is an admirable substitute for the much less tractable chromic acid.

Dr. WINSLOW had considerable experience at the Children's Hospital, in ear-troubles, and had never seen any pain caused by Monsel's solution, and never any by nitrate of silver beyond a slight burning. He had found that the chloro-acetic acid caused more pain than Dr. Burnett mentioned, and had seen some temporary irritation in the pharynx after its use, which he thought was caused by the vapor descending the Eustachian tube, the acid being very volatile.

Dr. RISLEY had also been struck with the absence of pain after applying washes to the ear; the explanation offered by the lecturer of this fact—viz., that it was because the mucous membrane of the middle ear was a lowly-organized membrane—was a new one to him, and probably partly explained the absence of pain, but he had ascribed the inactivity of the middle ear to the presence of the more or less profuse muco-purulent discharge always present in the class of cases alluded to, and from which it was difficult or impossible to entirely cleanse the ear; silver nitrate being decomposed by the organic matter, while it also acted as a diluent to the Monsel's solution and other substances. He had repeatedly passed solutions of nitrate of silver and of chloride of zinc through the Eustachian tube into the throat, producing unpleasant symptoms there without bad results, and had repeatedly applied Monsel's solution in full strength to small polypoid growths and granulations springing from the promontory, and on only one occasion had any pain been occasioned, which, however, lasted but an hour or two.

Dr. L. B. HALL sees a great many cases of diseases of the ear at the Philadelphia Dispensary, and his experience would corroborate Dr. Allen's statement that there was very little pain from strong caustic agents in the middle ear. He did not think the nitrate of silver had much caustic effect, as he had seen polypi continue to grow under the application of a forty-grain solution every other day. This solution he does not use very much now, as other agents suited him better. He thought that from its known affinity for albumen the nitrate of silver does not reach beyond the surface. He had found a twenty-grain solution of chloral hydrate a good application in some cases of otorrhœa.

Dr. WASHINGTON L. ATLEE spoke of the value of the stick nitrate of silver, full strength, as a topical application. He had found that it caused very little pain; and, when applied to a very sensitive or raw surface, such as we find in granular inflammation of the os uteri,

that it actually relieves pain by forming a film of coagulated albumen, which shields the parts beneath like a fresh cuticle. He did not regard it as a caustic, as it acts only superficially, and by forming with the tissues the albuminate of silver, in which condition it has no further caustic effect. It does not destroy tissue, but on the contrary promotes cicatrization and repair.

Dr. ATLEE had never used hydrate of chloral as a surgical dressing, but had attended cases where it had been used. In one case, which had just been dismissed, of fissure of the anus, surrounded by an inflamed and excoriated zone, accompanied with botryoidal excrescences, where chloral had been tried with only temporary relief, he applied a strong (one-half) or equal parts solution of chromic acid pretty thoroughly to the diseased surface. The result was that the patient went home perfectly cured in six weeks, restored from a cachectic, miserable condition to ruddy health. In this case the constitutional treatment was arsenic and iron.

Dr. ATKINSON said that he would like to ask Dr. Duhring what would cure pruritus. Dr. Bulkley recommends chloral and camphor rubbed up with glycerin (āā ℥j to ℥j), which he had used with excellent results, but the relief was only temporary.

Dr. LOUIS A. DUHRING said: I have had no experience with chloral, but of all external remedies for pruritus I give the preference to carbolic acid in a solution of suitable strength of water and glycerin, varying from five to fifteen minims to the ounce; on the average, not more than five. Beyond this strength it becomes irritating, and loses some of its anæsthetic effects. Carbolic acid is by all odds the best external remedy in my experience, but I rely more on internal treatment, varying with the case.

In regard to nitrate of silver, I am surprised at the statement that it is not a caustic agent. One of the best possible means of treating lupus vulgaris is to attack, and, by repeated applications, destroy the nodules of cellular formation that form the disease, by the solid stick. In molluscum sebaceum, one of the neatest methods of treatment to prevent the recurrence of the tumors is to incise them and apply a point of nitrate to the base.

Dr. F. D. CASTLE said that the nitrate of silver was undoubtedly a caustic, and when used in granular conjunctivitis it produces a true escharotic effect upon the granulations, a slough being thrown off some time after the application of the caustic. On account of its tendency to destroy the tissues to which it is applied, the best authorities dissuade from the use of the pure nitrate of silver in the treatment of diseases of the conjunctiva, and recommend in its stead the lapis mitigatus. And Stellwag advises, in granular conjunctivitis, that after we have considerably reduced the size of the granulations by use of the lapis mitigatus, we should substitute a solution of the nitrate of silver, so as not to incur the risk of producing a loss of substance in the tissue of the conjunctiva, which might lead to the formation of a cicatrix.

Dr. RISLEY referred to a series of experiments made by him to determine the effect of applications of several substances to the conjunctiva, viz.: mitigated stick of nitrate of silver, sulphate of copper, and a twenty per cent. solution of carbolic acid in glycerin, with the view to determine the relative increase in temperature. By the thermometer, placed in the *cul de sac* of the conjunctiva, it was found that the nitrate of silver had the least influence in this direction, as the temperature at the end of fifteen minutes had only risen one-fourth to one-half a degree, but two hours later it had increased to one and a half to two degrees. The sulphate of copper was never followed by a rise of less than two degrees at the end of the first quarter of an hour; and after the carbolic acid, in the same time, the thermometer indicated a rise of from two and a half to three degrees, but never less. In his experience, the carbolic acid in twenty per cent. solution succeeded better in some cases of granular lids than the sulphate of copper or mitigated stick of nitrate of silver. The immediate effects of this agent are pain, varying in different cases; generally it is severe for a few seconds, but does not last more than half a minute, when its anæsthetic effect comes on. The conjunctiva at the first becomes vermilion-red, but this is very soon followed by a uniform white film. After the nitrate, pain is complained of for several hours; its caustic effect is shown by the small rolls of cast-off epithelium that collect in the inner canthus in a few hours after its application. The same is observed after the application of carbolic acid.

BIOLOGICAL AND MICROSCOPICAL SECTION OF THE ACADEMY OF NATURAL SCIENCES.

JANUARY 3, 1876.

Director, Dr. RUSCHENBERGER, in the Chair.

DR. J. G. HUNT made an oral communication upon the subject of the *potato-fungus*, in the course of which he remarked that, besides disease of the potato-vines and leaves, we have three apparently separate maladies affecting the tubers. In the first of these the potatoes may be collected in apparent good condition, and in a few days putrefy, the cause of this decay being unknown.

In the second variety of potato-disease we find the tubers filled with hard nodules, constituting a kind of dry rot, which is probably, but not certainly, due to the growth of a fungus.

In the third form—that now under consideration—we may find the body of the potato

sound, but the surface more or less covered with irregular excavations which seldom involve an entire tuber.

On microscopical examination of thin sections, extending through an excavation, which he is not aware has hitherto been made, we find in the outer layers that the starch-granules have mostly disappeared, their places being occupied by chains of spores and abundant mycelial threads, the latter being rarely septate. In deeper-seated layers the fungous elements are less numerous and the starch-corpuscles more abundant, although still presenting a roughened appearance as though sand-papered. The fungus, as shown in specimen upon the table, exhibited, Dr. Hunt remarked, some of the characters of Peronospora, although it did not quite agree with descriptions in every respect. He was therefore unwilling to commit himself to the statement that the fungus he displayed was Peronospora, but he did not hesitate to say that this variety of potato-disease was not produced by any insect, and, furthermore, that the fungus was not the result of disease, but the first step of the morbid process. Mr. Worthington Smith has recently investigated this entophyte in England, where the potato-crop has been seriously injured by its ravages, and has fully demonstrated the diœcious character of the Peronospora. Dr. Hunt also mentioned finding the Oogonia or resting-spores of the fungus in the tuber, where they had seldom previously been observed.

Dr. RICHARDSON inquired whether Dr. Hunt considered the fungus he exhibited as identical with the Botrytis infestans formerly described as the cause of the potato-rot, and closely allied to B. Bassiana, the parasite of the disease called muscardine in the silk-worm.

Dr. HUNT replied that Peronospora, if this was really Peronospora, could be seen in his specimens to differ from Botrytis in not having its mycelium septate nor its terminal chains divided into three lobe-like branches at the apex.

Dr. HARRISON ALLEN remarked that he had for some time wished to bring before the Section a subject which seemed to him peculiarly appropriate for its consideration, and that was whether, in making local applications to the mouth and throat, remedies affect the mucous membranes in any way which can be recognized beneath the microscope. It is stated on good authority that globules of mercury have been seen among the deeper layers of cutaneous epithelium after the inunction of mercurial ointment, and, according to Anspitz, starch-corpuscles may migrate from the peritoneum to the lungs, so that he believed a valuable field for discovery was open to microscopists in examining the local action of fuming nitric acid (so useful in morbid conditions of the closed glands of the pharynx), iodine and its preparations, nitrate of silver, especially in the strong solutions employed for throat-affections, astringents, and many other topical applications.

Dr. HUNT did not believe that starch-corpuscles could migrate from the peritoneum to the lungs, and thought there was far too great a disposition in the profession to credit marvellous medical stories on the authority of mythical German observers with unpronounceable names.

Dr. SEILER suggested that most of the topical effects of remedies applied to mucous membranes could be explained on the principle of osmosis, and also that the necessity of using the very strong solutions, referred to by Dr. Allen, for the throat, existed in the fact that the chloride of sodium in the saliva, etc., entirely decomposes weak solutions of the silver salt.

Dr. ALLEN observed that whilst comparative physiology had already received much attention, comparative pathology was almost entirely a science of the future, its rudiments, as yet, being scarcely understood. Thus, for example, he once heard a distinguished medical gentleman speak of an abscess in an oyster, which was simply impossible, he conceived, in an animal without a closed circulation. In like manner, the reported production of inflammation in polyps by injecting tincture of cantharides was probably without scientific foundation.

Dr. MCQUILLEN mentioned that an oyster had recently been brought to him for examination, in which two of the most important signs of inflammation, viz., redness and swelling, were quite manifest to the naked eye, but he had not yet had time to make any microscopic investigation of the pathological changes corresponding to these macroscopical characters. There was no doubt, however, that we must be very careful never to dogmatize from experiments upon dogs and other inferior animals, and this had been shown recently, with renewed emphasis, by observations on a woman with gastric fistula, which quite disproved the results of long series of experiments upon digestion in dogs, as applied to the same process in human beings.

Dr. SEILER stated that this diversity was only what we had reason to expect, since the active ingredient of canine gastric juice was a mineral acid, hydrochloric, whilst the digestive fluid of man, as he had lately demonstrated by researches upon an executed criminal, owed its energy to an organic acid.

Dr. HUNT remarked that the histological structure of the gastric glands in the dog was quite different from that met with in a human being, and, humiliating as the confession was, we must admit that the true analogue to our own stomachs was to be found in that of the hog, which histologically approached very closely to the arrangement of the corresponding organ in man.

REVIEWS AND BOOK NOTICES.

THE STUDENT'S GUIDE TO THE PRACTICE OF MIDWIFERY. By D. LLOYD ROBERTS, M.D., M.R.C.P. London. Published by Lindsay & Blakiston.

This brochure, of some three hundred pages, on the whole excellently fulfils the purpose for which it was written, *i. e.*, the instruction of students. It "contains as complete a view of obstetrics as the limits of a manual will permit." The practitioner will find it of little value.

CYCLOPÆDIA OF THE PRACTICE OF MEDICINE. Edited by Dr. H. VON ZIEMSSEN. Vol. V. DISEASES OF THE RESPIRATORY ORGANS. ALBERT H. BUCK, M.D., Editor of the American edition. New York, W. Wood & Co.

The fifth volume of this now widely-known work maintains the high standard of excellence established by its predecessors.

The present volume contains articles upon croupous pneumonia, catarrhal pneumonia, hypostatic processes in the lungs, and pneumonia from embolism, by Professor Juergensen, of Tübingen; upon anæmia, hyperæmia and œdema, hemorrhages of the lungs, atelectasis, atrophy, hypertrophy, pulmonary emphysema, gangrene, new growths in the lungs and mediastinum, and parasites in the lungs, by Professor Hertz, of Amsterdam; upon pulmonary consumption and acute miliary tuberculosis, by Professor Ruehle, of Bonn; and on chronic and acute tuberculosis, by Professor Rindfleisch, of Würzburg.

While fortified with bibliographies and bristling with references, the articles themselves are far from being pedantic, but are written in a style which makes the volume easy to read, for the most part, and satisfactory for reference.

Professor Juergensen believes croupous pneumonia to be a constitutional disease, and not dependent upon a local cause. The pulmonary inflammation is merely the chief symptom, and the morbid phenomena are not due to the local affection. He classifies it among the group of infectious diseases. The reasons for this view are given with considerable detail and not without a certain pugnacity of style, which, in fact, enlivens his pages throughout. The danger in croupous pneumonia, according to Juergensen, threatens principally the heart of the patient. Death results from insufficiency of the heart.

The plan of treatment recommended is based upon this view to a great extent, and is detailed at some length.

Although croupous pneumonia is the *pièce de résistance* of this volume, occupying more than a quarter of its pages, yet the articles on pulmonary emphysema and pulmonary consumption also receive a large share of attention, and the views of their respective authors, as well as those of Professor Rindfleisch on the pathology of tuberculosis, are of great interest in view of the rapidly-changing theories on the origin of these affections.

The translation has been very ably performed, and the mechanical execution of the book is good.

SELECTIONS.

ON CONJUNCTIVAL TRANSPLANTATION FROM THE RABBIT TO MAN (by J. R. Wolfe, M.D., F.R.C.S.E.).—At the Annual Meeting of the British Medical Association, August, 1875, Dr. Wolfe exhibited patients upon whom he had operated with success, and gave the following detailed account of the operation:

I generally put both the patient and the rabbit under chloroform. I then separate the adhesions so that the eyeball can move in every direction. Next I mark the boundary of the portion of the conjunctiva of the rabbit which I wish to transplant, by inserting four black silk ligatures, which I secure with a knot, leaving the needles attached; these black ligatures indicate also the epithelial surface, which would be very difficult to distinguish after separation. I take from the rabbit that portion of the conjunctiva which lines the inner angle, covering the membrana nictitans, and extending as far as the cornea. I select this on account of its vascularity and looseness. The ligatures being put on the stretch, I separate the conjunctiva to be removed with scissors, and I transfer it quickly to replace the lost conjunctiva palpebræ of the patient, securing it in its place by means of the same needles, and adding other two stitches or more if requisite. Both eyes are then covered with a bandage and dry lint. For the first forty-eight hours the conjunctiva has a grayish look, but it gradually loses that appearance, and, with the exception of some isolated patches here and there, it becomes glistening, in some parts looking not unlike conjunctival thickening. These patches gradually decrease until the whole assumes a red appearance.

Should any irritation set in, I apply warm-water fomentations. With regard to chloroform, Prof. Cohn operates on the rabbit without anæsthetics, and I should myself prefer to do so if I could manage satisfactorily, for rabbits do not stand long anæsthesia; but the struggles of the animal are a very great obstacle in the way of the careful dissection required. With regard to the patient, it must be borne in mind that it is a long and tedious operation, taking about three-quarters of an hour in its performance, and that under no circumstances is it safe to maintain insensibility throughout the whole process. In a grown-up intelligent person, therefore, I do it without chloroform; and in the case of the young boy above referred to, I put him under

chloroform only during the first stage,—namely, while separating and dissecting the adhesions,—and completed the rest by coaxing the patient into submission.

Accidents during the operation.—It is always desirable to have at least two rabbits at hand, in case one should succumb under chloroform. I may mention also that in one of the operations, after putting the ligatures on the stretch and dissecting the portion of the conjunctiva which I marked out for removal, two of the ligatures with half of the conjunctiva tore away from the rest. To give up this eye and proceed to operate on the other eye of the animal would not have been advisable, on account of the time required to do so; I therefore determined to proceed with the operation in the following manner. I spread out the portion of the conjunctiva thus removed upon the back of my left hand, and the needles and ligatures attached to it I held in the palm of the same hand, and proceeded to remove the rest of the conjunctiva from the rabbit, and, by means of the remaining two ligatures, I fixed this on the conjunctiva palpebræ. This accomplished, I turned to that portion of the conjunctiva spread out on my hand, which I found dry and firmly adherent to the hand; a few drops of warm water put upon it sufficed to soften it and make it relinquish its hold of the skin, and I then transferred it to its proper destination.

Von Wecker puts the conjunctiva upon a watch-glass, and warm water underneath; but I consider the process accompanied with many inconveniences, and I would never resort to it myself except in a case of emergency. I consider quick transplantation, without previous handling and preparing that delicate membrane, decidedly preferable.

The needles which I employ are half-curved No. 12, which Weiss makes for the purpose. Two small silver spatulæ are also requisite for spreading out the conjunctiva. There are various kinds of needle-holders, but I find my own fingers most suitable for the purpose.

In conclusion: although, as stated before, I have resorted to this method only in hopeless cases, when there was no disposable neighboring conjunctiva of the burnt eye for supplying the deficiency, I found the result so highly satisfactory that under no circumstances would I think myself justified in removing healthy conjunctiva from an injured eye; but in all cases I would supply the deficiency from the conjunctiva of the rabbit, as being the safest and best method now at our disposal for the cure of such injuries.

THE *Allgemeine Medicinische Central Zeitung* states that in one district several foxes, which were shot, were found to contain in their muscles a large number of free and encapsuled trichinæ.

GLEANINGS FROM EXCHANGES.

JABORANDI IN BELLADONNA-POISONING.—Two cases of belladonna-poisoning in University Hospital, London, afforded Dr. Sydney Ringer an opportunity of testing the asserted antagonism of pilocarpine, the alkaloid of jaborandi, and atropia. One grain and a third of the pilocarpine were injected hypodermically within two hours and forty-five minutes, yet without any apparent effect on the symptoms. For a few seconds after the third injection it was thought that the skin became a little moister. However, the perspiration ceased almost immediately. In almost every instance one-third of a grain of pilocarpine induces in ten minutes to a quarter of a hour free perspiration and salivation, lasting often several hours. Four times that quantity was used without effect, affording a good example of the antagonism between atropia and pilocarpine. In order to test the specimen of pilocarpine, one-third of a grain was injected under the skin of another patient, and in a quarter of an hour he was bathed in perspiration, and his mouth filled with saliva. Having tested the activity of the drug, and wishing to save the patient the annoyance arising from the salivation and perspiration, one-hundredth part of a grain of atropia was injected under the skin, and in five minutes the perspiration and salivation had almost ceased. To learn if the poisoned patient was less subject to pilocarpine than other persons, after his recovery one-third of a grain of pilocarpine was injected, and in twenty minutes his skin was drenched with perspiration. Although these two drugs are in so many ways antagonistic, in this instance any benefit arising from the pilocarpine could not be detected.

THE INFLUENCE OF EXERCISE ON THE CIRCULATION (*The Lancet*, March 18, 1876).—Dr. F. A. Mohamed, who carefully observed the pedestrian Weston during his five-hundred-mile walk, writes as follows concerning the action of exercise upon the circulation: Exercise appears to produce two important and opposite effects on the circulation, according to the general condition of the person under observation. In persons out of condition and unaccustomed to it, exercise reduces the arterial tension and increases the temperature; carried to an extreme, this condition may produce syncope from anæmia of the brain, which is robbed of its blood by the unduly increased requirements of the muscles, and sudden failure, by paralysis, of the action of the heart. On the other hand, it may increase the arterial tension. The cause for this increase is more obscure: it would appear to occur from impaired nutritive power in the tissues interfering with what has been called the chemico-vital capillary power, and thus causing capillary obstruction; or some might explain it by contraction of the arterioles due

to irritation of their vaso-motor nerves by an irritable and exhausted brain. Or, again, it may be produced from the action of the heart being excited to a degree above that required for the effectual circulation of the blood, the influx of blood into the vessels being in excess of the afflux by the capillaries, thus raising the arterial tension.

Variation of tension in this direction is accompanied by a reduction of the temperature. It increases the work required from the heart, and failure of that organ to meet the strain thrown upon it gives rise to dilatation. This is indicated by a number of symptoms which may be easily recognized; the chief ones being breathlessness, oppression at the præcordia, vertigo, coldness of the extremities, and reduction of temperature of the body generally; pallor and anxiety of the face, dilatation of the pupil, smallness and irregularity of the pulse, with a constantly full vessel, with irregularity and shallowness of the respiratory acts.

Dorsal Dislocation of the Head of the Femur, with Eversion of the Limb (*The Lancet*, February 5, 1876).—Mr. Annandale reports the case of a sailor, æt. 29, who six weeks before coming under observation received an injury of the hip from a bale of goods falling upon him. When examined, the injured limb was found to be shortened three-quarters of an inch and *everted* to its full extent. The whole limb was fixed in this everted condition. The great trochanter was displaced upwards and backwards, and the head of the bone could be felt over the situation of the sciatic notch. In addition to these symptoms, Mr. Syme's characteristic sign of sciatic dislocation was present,—namely, that the injured limb could not be straightened without an arching of the spine. If the spine was straightened the thigh became flexed, and if the thigh was straightened the spine became arched. No crepitation could be detected. Having from all these symptoms diagnosed a sciatic or dorsal dislocation, the patient was put under chloroform, and the manipulative method of reduction practised. The bone was readily reduced by flexing and adducting the limb and then making it take a sweep outwards, but it also readily slipped out of the acetabulum again when the limb was moved; and in order to prevent its displacement a long thigh-splint was applied and retained for a month. At the end of this time the patient was allowed to rise from bed and use crutches, and two weeks afterwards he was dismissed, being able to bear considerable weight on the limb. When the limb was examined before his dismissal it was found to be natural in length and position, and it admitted of free flexion, extension, adduction, and abduction at the hip. The only symptom complained of was some weakness of the whole limb; but this was gradually passing off.

The occurrence of eversion of the limb in cases of dorsal dislocation of the head of the femur is quite exceptional.

A Simple Method of Treating Transverse Fracture of the Patella (*The Canada Lancet*, January 1, 1876).—Dr. Edward Hornibrook reports three cases of transverse fracture of the patella, which he treated in the following manner. The limb was placed on a straight posterior splint, with the heel slightly elevated; and the lower fragment was secured in an immovable position with adhesive plaster. Several strips of adhesive plaster were then placed lengthwise over the upper fragment, extending upwards about three inches over the anterior surface of the thigh, the free ends hanging over the patella. To these free ends a piece of strong twine was attached, and was passed over a pulley adjusted about two inches higher than the toes, so that a two-pound weight would hang clear of the bed. A bandage was then applied, from the toes upwards, passing under the free ends of the adhesive plaster and around the straps in the front of the thigh, to prevent slipping.

In all of his cases he secured firm bony union.

He claims for this method the following points of superiority over other methods which have been practised. It is neither so painful nor so expensive as Malgaigne's hooks. The fragments are not tilted, as in Professor Woods's method, by a figure-of-eight bandage passing through hooks on the under surface of the splint. It is more easily applied, and the plasters are not so liable to slip, as in Professor Sambarn's method, in which a pad is placed above and below the broken fragments, and a long slip of plaster along the front of the leg and thigh extending from the hip to the ankle, a loop being left over the knee, into which a stick is inserted, and the fragments approximated by twisting the stick. Mr. Callender's method is much more complicated, although it includes the principle of keeping the fragments in apposition by means of a pulley and weight; but he makes the weight draw the lower fragment upwards as well as the upper fragment downwards, which is wholly unnecessary, for the ligamentum patellæ is not contractile. For this method a Neville splint is required, and, besides, so much depends on the nicety and exactitude of cutting and adjusting the plasters, that in country practice it will seldom be attempted. The plasters "may require to be adjusted from time to time;" whereas with this method the plasters will not require readjusting during the whole treatment, and the only apparatus required is a common posterior splint and an empty spool to make a pulley, which can be suspended either from the ceiling or an upright post with a transverse arm. Teale's expectant method is quite as painful, and has such an element of uncertainty in it that few surgeons will follow it in practice.

RECENT PROGRESS IN THE TREATMENT OF DISEASES OF THE THROAT (F. J. Knight, M.D.: *Boston Medical and Surgical Journal*, April 13, 1876).—Cases of extirpation of the larynx by Bottini and Langenbeck are given, together with a description of some operations upon dogs by the first-named, in which the larynges were removed by the galvano-caustic knife without the slightest hemorrhage, either primary or secondary. The tampon canula of Trendelberg is described at some length, and Dr. Carl Reyher reports a case in which in a patient with laryngeal stricture the artificial larynx was used with good effect. Lücke classifies bronchocele under six heads, and thinks that the influence of iodine on thyroid enlargements is not to be doubted, but it is indicated only in tumors containing true glandular tissue. Two or three grains twice a day is a large enough dose to begin with, and it is best given in simple solution with water. Painting the gland with tincture of iodine should not be practised, as the skin is too tender. When removal of the tumor is indicated, it had better be accomplished with the knife. During the past ten or fifteen years the operation has been gaining in favor, and if care is taken to tie all cut vessels there will be but little hemorrhage.

Saint-Germain speaks strongly against the too common practice of trying to excise all enlarged tonsils with the tonsillotome. Only those which project and have a narrow base should be treated in this manner, but all others should be excised with the bistoury and long forceps made for the purpose.

A CASE OF POPLITEAL ANEURISM TREATED BY DIGITAL PRESSURE (R. W. Hutcheson, M.D., M.R.C.S., Eng.: *New York Medical Record*, April 22, 1876).—A laborer, æt. 33, who was temperate and had always enjoyed good health, noticed a stiffness about the knee in last July, and, on rubbing it, discovered a small swelling in the popliteal space. On February 9, digital pressure of the femoral artery was kept up for eight hours, but so imperfectly that no good effects resulted. On the 11th Signorini's tourniquet was applied, and its use continued for three days, but the surface became so irritated that its use had to be suspended. On the 15th digital pressure was again used, the finger of the operator being aided by the weight of a bag containing ten or twelve pounds of shot above it. Pressure was kept up for twenty-two hours, pulsation having ceased in the tumor at the expiration of sixteen hours.

COLORED GLASS IN INSANITY.—The experiments of Dr. Pouza, of Alexandria, in the use of colored glass in the treatment of the insane, are narrated in *The British Medical Journal* of March 25, 1876. Dr. Pouza placed his patients in chambers colored red, blue, and violet. In the red room he placed a melancholic man, who had refused his food, but who in three hours was lively and hungry. In the blue chamber a violent lunatic was placed, who became quieter within an hour. The violet room furnished equally good results. Of the rays of the spectrum the violet possesses the most intense electro-chemical rays, the red are the richest in calorific rays, the blue, devoid of these properties, are the most useful in their quieting influence. It is to be hoped that further experiments may show that by the employment of the simple means referred to, the good results which Dr. Pouza has indicated may be obtained by others.—*Boston Med. and Surg. Jour.*

HOW TO CURE A COLD IN THE HEAD (David Ferrier, M.D.: *Lancet*, April 8, 1876).—Dr. Ferrier, being dissatisfied with the usual formula for treating a cold in the head, namely, "sudorifics and lying in bed," has made a trial of various substances, to be used in the form of snuffs at the beginning of an attack of nasal catarrh. He finds the following prescription very efficacious:

℞ Muriate of morphia, gr. ij;
Acacia powder, ʒij;
Subnitrate of bismuth, ʒvj.

Of the powder one-quarter to one-half may be taken as snuff in the twenty-four hours.

CHLORAL IN PITYRIASIS.—Dr. Martineau asserts that a solution of forty grains of chloral to an ounce of water, applied to the scalp each morning by means of a sponge, using slight friction, and allowing it to dry, is very efficacious in pityriasis. If the disease is recent, and the lotion is uninterruptedly used for a month, he predicts a certain cure. In the chronic and more obstinate cases, he recommends the continuance of the application of the solution until the disease disappears, as its daily use produces no inconvenience, whilst it relieves the itching. —*Med. and Surg. Reporter.*

MISCELLANY.

MONKEY SYMPATHY.—Many cases of sympathy in monkeys might be given, but I shall confine myself to stating one which I myself witnessed at the Zoological Gardens. A year or two ago, there was an Arabian baboon and an Anubis baboon confined in one cage, adjoining that which contained a dog-headed baboon. The Anubis baboon passed its hand through the wires of the partition, in order to purloin a nut which the large dog-headed baboon had left within reach,—expressly, I believe, that it might act as a bait. The Anubis baboon very well knew the danger he ran, for he waited until his bulky neighbor had turned his back upon the nut with the appearance of having forgotten all about it. The dog-headed baboon, however, was all the time slyly looking round with the corner of his eye, and no sooner was the arm of his victim well within his cage than he sprang with astonishing rapidity and caught the re-

treating hand in his mouth. The Anubis baboon, when it had been rescued by the keeper, retired to the middle of his cage, moaning piteously. The Arabian baboon now approached him from the top part of the cage, and, while making a soothing sound very expressive of sympathy, folded the sufferer in its arms,—exactly as a mother would her child under similar circumstances. It must be stated, also, that this expression of sympathy had a decidedly quieting effect upon the sufferer, his moans becoming less piteous so soon as he was enfolded in the arms of his comforter; and the manner in which he laid his cheek upon the bosom of his friend was as expressive as anything could be of sympathy appreciated.—*G. J. Romanes, in Popular Science Monthly for May.*

HOMŒOPATHIC CREDULITY.—Gouty and rheumatic readers may take warning of the dangers of lithia from a story in one of the journals, reproduced from an American source. It is the case of Dr. Dunham, who "was compelled for a time to relinquish practice in consequence of severe cardiac rheumatism," but who has been so effectually cured as to be chosen as president of a convention to be held in Philadelphia this summer. He consulted Dr. Hering, who at the third interview told him that if "*Lith. carb.*" was not the remedy, he did not know what was. Thereupon Dr. Denham "returned to his home, and not being able to find the desired potency of the *lithium* he procured the third trituration, and attempted himself to triturate to a higher degree. The medicine having been placed in a mortar with the requisite sugar of milk, he began the trituration. It was not long, however, before the exhalations from the triturating drug began to manifest themselves, and the patient succumbed to their influence, lying for some time in a semi-unconscious state. The recovery from this latter seeming complication was slow, but resulted in most complete recovery from his cardiac disease, without further medical aid, thus illustrating the wonderful efficacy of the truly homœopathic remedy, and the care requisite to its selection." If such fearful effects follow the "exhalation" from triturated infinitesimals of lithium, what will happen to the imbibers of Blake's lithia-water?—*The Doctor.*

NOTES AND QUERIES.

AT a special meeting of the Medical Staff of the Presbyterian Hospital, in Philadelphia, held March 16, 1876, the death of Dr. John S. Parry having been announced, the following resolution was unanimously passed:

"That we have heard with profound sorrow of the untimely death of our distinguished colleague, John S. Parry, M.D.

"We feel that in the death of Dr. Parry the profession at large has lost a brilliant, sagacious, erudite, and reliable member, and that this hospital has met with a great loss in the death of one who, by his scientific zeal, clearness of judgment, gentleness of manner, and high moral character, commanded the entire confidence of all his professional brethren. This staff also considers it eminently due to Dr. Parry to advert at this time to his extraordinary attainments in scientific research, and to his exceedingly valuable additions to medical literature, and we lament that a career so signally useful in this respect has been so soon terminated. While recognizing the loss our profession has sustained, we desire to extend our deepest sympathy to the widow of our late colleague, in her bereavement."

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U.S. ARMY FROM APRIL 9, 1876, TO APRIL 22, 1876, INCLUSIVE.

BAILEY, E. J., SURGEON AND MEDICAL DIRECTOR.—Granted leave of absence for thirty days. S. O. 38, Department of the Columbia, April 3, 1876; and leave extended one month. S.O. 45, Military Division of the Pacific, April 12, 1876.

CAMPBELL, A. B., ASSISTANT-SURGEON.—Granted leave of absence, on surgeon's certificate of disability, for one month. S. O. 62, Department of Texas, April 8, 1876.

HALL, J. D., ASSISTANT-SURGEON.—Granted leave of absence for two months. S. O. 63, Military Division of the Atlantic, April 11, 1876.

By S. O. 71, A. G. O., April 8, 1876, the following changes are made:

HAPPERSETT, J. C. G., ASSISTANT-SURGEON.—Relieved from duty in Department of the Missouri, ordered to Philadelphia, Pa., and report arrival to Surgeon-General.

HUBBARD, V. B., ASSISTANT-SURGEON.—Ordered to Department of California for assignment to duty.

REED, W., ASSISTANT-SURGEON.—To accompany recruits to Department of California, and, upon completion of this duty, ordered to Department of Arizona, for assignment to duty.

The following-named officers are relieved from duty in the Military Division of the Atlantic, and ordered to Department of Texas for assignment to duty:

GODDARD, C. E., SURGEON.

COMEGYS, E. T., ASSISTANT-SURGEON.

SHANNON, W. C., ASSISTANT-SURGEON.

The following-named officers are relieved from duty in the Division or Department where they are now serving, ordered before the Army Medical Board, New York City, for examination for promotion, and, upon its completion, to the Division or Department set opposite their names, for assignment to duty:

MEACHAM, F., ASSISTANT-SURGEON.—From Military Division of the Atlantic to Department of Texas.

STYER, C., ASSISTANT-SURGEON.—From Department of the South to Military Division of the Atlantic.

CORSON, J. K., ASSISTANT-SURGEON.—From Department of the South to Military Division of the Atlantic.

WEISEL, D., ASSISTANT-SURGEON.—From Department of the South to Department of Texas.

KIMBALL, J. P., ASSISTANT-SURGEON.—From Department of Dakota to Military Division of the Atlantic.

EWEN, C., ASSISTANT-SURGEON.—From Department of the Gulf to Military Division of the Atlantic.

And the following, upon completion of their examination, to report by letter to the Surgeon-General:

HORTON, S. M., ASSISTANT-SURGEON.—From Department of Texas.

JAQUETT, G. P., ASSISTANT-SURGEON.—From Department of the Platte.

WHITEHEAD, W. E., ASSISTANT-SURGEON.—From Department of Texas.

BUCHANAN, W. F., ASSISTANT-SURGEON.—From Department of Texas.

MCELDERRY, H., ASSISTANT-SURGEON.—From Department of the Columbia.

BENTLEY, E., ASSISTANT-SURGEON.—From Department of California.

GIRARD, J. B., ASSISTANT-SURGEON.—From Department of Arizona.

KING, J. H. T., ASSISTANT-SURGEON.—From Military Division of the Atlantic.

HAMILTON, J. B., ASSISTANT-SURGEON.—Resignation accepted by the President, to take effect May 31, 1876. S. O. 71, A. G. O., April 8, 1876.

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